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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BATTAGLIA, MICHAEL V

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/612,970

Applicant(s)

KOH, YOUNG-OK

Examiner

Michael V Battaglia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 16-20 is/are rejected.
- 7) ☒ Claim(s) 11-15 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 12-13.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. Claims 12-15 are objected to because of the following informality. In line 1 of the claim 12, the examiner suggests replacing "reducing" with -reproducing-. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4, and 6-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Fukuda et al (hereafter Fukuda) (US 6,351,440).

In regard to claim 1, Fukuda discloses a method of reproducing data from a disc in a disc-reproducing system, the method comprising: positioning a pick-up at a predetermined position on the disc and counting a number of track traverse pulses which are generated when a

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tracking is switched to "OFF" at a lowest speed factor (Col. 12, line 60-Col. 13, line 18); positioning the pick-up at a predetermined position on the disc and counting a number of track traverse pulses which are generated when a tracking is switched to "OFF" at a highest speed factor (Col. 13, lines 19-35); obtaining a frequency of vibration of the disc by subtracting the number of track traverse pulses at the lowest speed factor from the number of track traverse pulses at the highest speed factor (Col. 13, lines 41-43); and varying a speed factor of reproducing data from the disc, by comparing the frequency of vibration with a predetermined base value (Col. 14, lines 45-48).

In regard to claim 4, Fukuda discloses an apparatus for reproducing data from a disc inducing vibration, the apparatus comprising: a pick-up unit detecting a tracking traverse signal by revolving the disc in a tracking "OFF" state (Col. 12, lines 62-63); a signal amplifying unit differentially-amplifying the tracking traverse signal detected by the pick-up unit (Fig. 10, element 40); a signal comparator generating a tracking traverse pulse after comparing the tracking traverse signal amplified in the signal amplifying unit with a base signal (Fig. 10, element 7); and a control unit counting the number of tracking traverse pulses generated by the signal comparator at a lowest speed factor of the disc and also at a highest speed factor of the disc (Figure 10, element 60), obtaining the difference between the two counted numbers (Fig. 10, element 66), and then determining a frequency of vibration of the disc based upon the difference (Fig. 10, element 50), and varying a speed factor of the disc as a function of the frequency of vibration (Fig. 10, element 50).

In regard to claim 6, Fukuda discloses a method of reproducing data from a revolving disc in a disc-reproducing system, comprising counting a number of track traverse pulses at a first revolving speed (Col. 13, lines 12-18), counting a number of track traverse pulses at a second revolving speed (Col. 13, lines 24-35), and determining a frequency of vibration of the disc by

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comparing the number of track traverse pulses counted at the first revolving speed with the number of track traverse pulses counted at the second revolving speed (Col. 13, lines 40-44).

In regard to claim 7, Fukuda discloses the method of claim 6 further comprising comparing the determined frequency of vibration of the disc with a predetermined base value (Col. 13, lines 59-61) and revolving the disc at a reproducing speed based upon the comparison of the determined frequency of vibration with the predetermined base value (Col. 14, lines 52-55).

In regard to claim 8, Fukuda discloses the method of claim 7 wherein the first revolving speed is slower than the second revolving speed (Col. 12, lines 60-65 and Col. 13, lines 24-25).

4. Claim 3 is rejected under 35 U.S.C. 102(e) as being anticipated by Hirashima (US 6,377,527).

In regard to claim 3, Hirashima discloses a method of reproducing data from a disc in a disc-reproducing system, the method comprising: positioning a pick-up at a predetermined position on the disc and counting a number of track traverse pulses which are generated when a tracking loop is switched to "OFF" at an arbitrary speed factor, and varying a speed factor of reproducing data from the disc, by comparing the number of track traverse pulses with a predetermined base value (Col. 3, lines 21-32).

5. Claims 16 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Yen et al (hereafter Yen) (US 6,097,680).

In regard to claim 16, Yen discloses an apparatus for reproducing data from a disc inducing vibration, the apparatus comprising: a pick-up unit detecting a tracking traverse signal (Fig. 2, element 22), a signal comparator comparing the tracking traverse signal with a base signal and then generating a tracking traverse pulse signal comprised of at least one tracking traverse pulse (Fig. 2,

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element 32), and a control unit counting the number of track traverse pulses generated in the signal comparator (Fig. 2, element 42).

In regard to claim 17, Yen discloses the apparatus of claim 16, wherein the control unit counts the number of track traverse pulses generated in the signal comparator at a first revolving speed of the disc and also at a second revolving speed of the disc (Fig. 6, elements 52, 54-55, and 60), determines a frequency of vibration of the disc based upon the track traverse pulse counts (Fig. 6, elements 54-56), and changes a speed of the disc based upon the frequency of vibration of the disc (Fig. 6, elements 57-60).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda in view of Fueki et al (hereafter Fueki) (EP 0 833 328 A2).

Fukuda discloses the method of reproducing data from a disc in a disc-reproducing system and the apparatus for reproducing data from a disc inducing vibration of claims 1 and 4, wherein tracking is switched "OFF" while the control unit counts the number of track traverse pulses at different disc revolving speeds (Col. 12, lines 62-63). Fukuda does not disclose that the control unit counts the number of track traverse pulses at a predetermined time after checking an innermost circumference of the disc when tracking is switched to "OFF".

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Fueki discloses a method of reproducing data from a disc in a disc-reproducing system and an apparatus for reproducing data from a disc inducing vibration. Fueki further discloses that when an optical disc is loaded, causing the pick-up moves to the innermost circumference of the disc. The method and apparatus inherently "check" that the pick-up is at the innermost circumference of the disc because the process of detecting track traverses and vibration begins a finite or "predetermined" amount of time after the method and apparatus are able to "check" that the pick-up is fixed at the innermost circumference of the disc (Col. 6, lines 20-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to move the pick-up in the method and apparatus of Fukuda to the innermost circumference of the disc and begin to count the number of track traverse pulses after the tracking is switched "OFF" and a predetermined amount of time after checking the innermost circumference; the motivation being to start the pick-up at a set location, thereby providing uniform results each time a disc is checked for vibration and a speed set.

7. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda in view of Hirashima.

Fukuda discloses the method of reproducing data from a disc in a disc-reproducing system as claimed in claims 6-8. In regard to claim 9, Fukuda discloses setting the first revolving speed to a 1x speed (Col. 12, line 65) and setting the second revolving speed to a high speed (Col. 13, lines 19-20). At the time of Fukuda's invention, a high disc revolving speed was a 12x speed (Col. 1, lines 26-30). As a result, Fukuda's second revolving speed falls short of being 24 times the first revolving speed.

Hirashima discloses a method of reproducing data from a disc in a disc-reproducing system that counts a number of track traverse pulses at different, increasing revolving speeds, determines a

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frequency of vibration and compares it to a predetermined base value, and revolves the disc at a reproducing speed based upon the comparison of the determined frequency of vibration with a predetermined base value (Fig. 2). Hirashima teaches that at the time of his invention, a high disc revolving speed was a 24x speed (Col. 3, line 35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the 24x speed as the high speed for the second revolving speed in the circuit of Fukuda as taught by Hirashima which will consequently, make the second revolving speed approximately 24 times the first revolving speed, the motivation being use a high disc revolving speed representative of the state of technology at the time of the invention.

In regard to claim 10, Fukuda discloses a method wherein the reproducing speed is decreased with increased frequency of vibration (Col. 14, lines 41-55).

8. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yen in view of Hirashima.

Yen discloses the apparatus for reproducing data from a disc inducing vibration of claims 16-17. Yen discloses a pick-up unit that reduces the track correction gain while the tracking traverse signal is being detected, however tracking is not turned "OFF".

Hirashima discloses an apparatus for reproducing data from a disc inducing vibration that detects a track traverse signal using a pick-up, counts a number of track traverse pulses at different, increasing revolving speeds, determines a vibration frequency, and changes the revolving speed based upon the vibration frequency (Fig. 2, elements S5-S7 and S9). Hirashima discloses that the pick-up unit further comprises a tracking "OFF" state and a tracking "ON" state and the pick-up unit detects a tracking traverse signal by revolving the disc in the tracking "OFF" state (Fig. 1, element 13 and Fig. 2, elements S4-S5 and S8). Hirashima teaches that turning tracking "OFF" will make

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detection of swings in a lens free condition of the pick-up less difficult and have the effect of restraining noise and vibration created at a high rotational speed that is uncomfortable for a user (Col. 1, lines 47-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to turn tracking to an "OFF" state while the pick-up unit detects a tracking traverse signal in the apparatus of Yen as taught by Hirashima; the motivation being to make detection of swings in a lens free condition of the pick-up less difficult and have the effect of restraining noise and vibration created at a high rotational speed that is uncomfortable for a user.

In regard to claim 19, Yen discloses a signal amplifying unit to differentially amplify the tracking traverse signal detected in the pick-up unit prior to sending the signal to the signal comparator (Figs. 3-5, element 39).

In regard to claim 20, Yen discloses a control unit that counts the number of track traverse pulses when the apparatus begins moving the reading along the track, i.e. at a predetermined time (Fig. 2, elements 53-55).

Citation of Relevant Prior Art

9. Basset et al (US 6,185,171) discloses a method of reproducing data from a revolving disc in a disc-reproducing system, comprising counting a number of track traverse pulses at a first, lower revolving speed, counting a number of track traverse pulses at a second, higher revolving speed, determining a frequency of vibration of the disc by comparing the number of track traverse pulses counted at the first revolving speed with the number of track traverse pulses counted at the second revolving speed, comparing the determined frequency of vibration of the disc with a predetermined base value, and revolving the disc at a reproducing speed based upon the

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comparison of the determined frequency of vibration with the predetermined base value.

However, switching tracking to "OFF" and checking an innermost circumference are not disclosed.

10. Tsuyuguchi et al (hereafter Tsuyuguchi) (US 5,862,113) discloses an apparatus for reproducing data from a disc inducing vibration. But Tsuyuguchi uses a vibration sensor instead of counting track traverse pulses and no mention is made of using or checking the innermost circumference of the disc.

Allowable Subject Matter

11. Claims 11-15, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the references alone or in combination disclose or suggest a method or apparatus including positioning a pick-up at a predetermined position on the disc and counting a number of track traverse pulses which are generated when a tracking is switched to "OFF" at a lowest speed factor, positioning the pick-up at a predetermined position on the disc and counting a number of track traverse pulses which are generated when a tracking is switched to "OFF" at a highest speed factor, obtaining a frequency of vibration of the disc by subtracting the number of track traverse pulses at the lowest speed factor from the number of track traverse pulses at the highest speed factor, and varying a speed factor of reproducing data from the disc, by comparing the frequency of vibration with a predetermined base value; and further including beginning counting of track traverses 100ms after checking the innermost circumference of a disc or a reproducing speed that is approximately 16 times the first revolving speed when the frequency of vibration is determined to be greater than or equal to 80Hz, 20 times the first revolving speed when the frequency of

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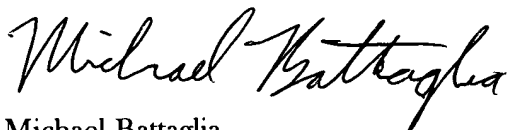
vibration is determined to be greater than or equal to 40Hz and less than 80Hz, and 24 times the first revolving speed when the frequency of vibration is determined to be less than 40Hz.

Conclusion

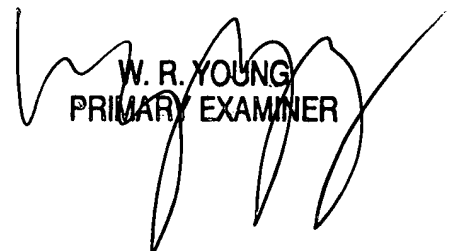
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V Battaglia whose telephone number is (703) 305-4534. The examiner can normally be reached on 5-4/9 Plan with 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 746-9911 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.



Michael Battaglia
August 11, 2003



W. R. YOUNG
PRIMARY EXAMINER